

ABSTRACT

An apparatus for treating wastewater including a physical-chemical reactor; a chemical supply operably connected to the physical-chemical reactor; a clarifier operably connected to and located downstream of the physical-chemical reactor; a ballast recirculation line operably connected between the clarifier and the high rate physical-chemical reactor; and a control system that directs a) influent into 1) the clarifier but not the physical-chemical reactor when flow or pollutants of the influent is within a selected low range and 2) the physical-chemical reactor and then into the clarifier when the flow/pollutants of influent is within a selected higher range and b) internally generated ballast into the physical-chemical reactor through the ballast recirculation line when the pollutants and /or flow is within the selected higher range.